

**REMARKS**

An Excess Claim Fee Payment Letter is submitted herewith to cover the cost of three (3) excess total claims.

Claims 5, 8-12, 15, 17-27 and 30-34 are all the claims presently pending in the application. Claims 5, 8, 11, 12, 15 and 17 have been amended to more particularly define the invention. Claims 31-34 have been added to claim additional features of the claimed invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 5 and 30 stand rejected under 35 U.S.C. § 112, second paragraph as allegedly indefinite.

Claims 5, 8-12, 15, 17-27 and 30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Dollinger (U.S. Patent No. 5,451,505).

These rejections are respectfully traversed in the following discussion.

**I. THE CLAIMED INVENTION**

The claimed invention (e.g., as recited in claim 5, and similarly recited in claims 8, 11, 12 and 15) is directed to DNA having embedded information. The DNA includes a gene portion including a predetermined gene, a portion which is other than the gene portion, and a nucleotide sequence which is not naturally occurring in the DNA and which is embedded in the portion which is other than the gene portion, and includes source identification information for identifying a source of the predetermined gene in the gene portion.

Conventional DNA may include a value-added gene embedded therein, in order to improve the characteristics of the organism having the DNA. However, such conventional DNA does not include any information therein to determine the source of the value-added gene embedded therein. Since DNA having such a value-added gene is easily copied, it is difficult to

apply technical restrictions to the copying, by third parties, of value-added genes.

The claimed invention, on the other hand, includes DNA having a nucleotide sequence which is not naturally occurring in the DNA and which is embedded in the portion which is other than the gene portion, and includes source identification information for identifying a source of the predetermined gene in the gene portion (Application at page 4, lines 5-9; page 11, lines 2-21). This nucleotide sequence may be used to identify the source of genetic information, for example, when the DNA is copied by a third party. Therefore, the claimed invention helps to prevent illegal copying of such genetic information (e.g., a value-added gene).

## **II. THE 35 USC §112, SECOND PARAGRAPH REJECTION**

Claims 5 and 30 stand rejected under 35 U.S.C. §112, second paragraph. Applicant notes, however, that claim 5 has been amended to replace the term “genetic information” with “a predetermined gene”, to address the Examiner’s concerns.

In view of the foregoing, the Examiner is respectfully requested to withdraw this rejection.

## **III. THE DOLLINGER REFERENCE**

The Examiner alleges that Dollinger teaches the claimed invention. Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by Dollinger.

Dollinger discloses methods for tagging and tracing materials using nucleic acids as taggants. The process of tagging involves altering a substance in a manner that allows for the subsequent identification of the substance by detecting the alteration which involves nucleic acids (Dollinger at Abstract).

However, contrary to the Examiner’s allegations, Dollinger does not teach or suggest “*a nucleotide sequence which is not naturally occurring in said DNA and which is embedded in said portion which is other than said gene portion, and comprises source identification information for identifying a source of said predetermined gene in said gene portion*”, as recited

in claims 5 and 12 and similarly recited in claims 8, 11, and 15.

As noted above, unlike conventional DNA in which the source of a value-added gene could not be identified, an exemplary aspect of the claimed invention is directed to DNA having a nucleotide sequence which is not naturally occurring in the DNA and which is embedded in the portion which is other than the gene portion, and includes source identification information for identifying a source of the predetermined gene in the gene portion (Application at page 4, lines 5-9; page 11, lines 2-21). This nucleotide sequence may be used to identify the source of genetic information, for example, when the DNA is copied by a third party. Therefore, the claimed invention helps to prevent illegal copying of such genetic information (e.g., a value-added gene).

Clearly, these novel features are not taught or suggested by Dollinger. Indeed, Applicant respectfully submits that Dollinger is unrelated to the claimed invention.

Instead, Applicant would again respectfully point out that Dollinger discloses a method for tagging and tracing materials using nucleic acids as taggants. For example, Dollinger discloses adding a taggant (e.g., a nucleic acid) to an item such as radioactive waste, gunpowder, oil, paper goods, food stuffs, etc. by either spraying the taggant onto the surface of the item or physically mixing the taggant and the item (Dollinger at col. 4, lines 113-19). Dollinger states, for example, that the nucleic acid taggant may be “covalently bound” to a component of the item.

Further, the purpose of “tagging” the item in Dollinger is to allow for identification of the source of the item. Thus, for example, a barrel of radioactive waste can be “tagged” with a nucleic acid (e.g., by actually using an aerosol can (or pump, or spray bottle, etc.) to spray the nucleic acid on the barrel of radioactive waste), so that when the barrel is discovered in a creek somewhere, **the source of the barrel of radioactive waste** (e.g., the Three Mile Island nuclear plant) **can be easily identified** by detecting the taggant, and the barrel can be returned to its rightful owner.

This is completely different than the claimed invention. Indeed, even assuming somehow that Dollinger did have something to do with DNA, Dollinger certainly does not teach or suggest DNA having a nucleotide sequence which is not naturally occurring in the DNA and which is embedded in the portion which is other than the gene portion, and includes source

identification information for identifying a source of the predetermined gene in the gene portion

First, the claimed invention includes a **nucleotide sequence which is embedded in the portion which is other than the gene portion**. The Examiner attempts to equate the taggant (which is applied with a spray bottle to the barrel of radioactive waste), with the nucleotide sequence in the claimed invention. However, the taggant in Dollinger and the nucleotide sequence in the claimed invention are completely unrelated.

First, even assuming (arguendo) that the taggant could be considered a “nucleotide sequence”, **the taggant in Dollinger is not “embedded in DNA”**, let alone embedded in a portion which is other than a gene portion of DNA (e.g., a portion of DNA which does not include a protein code sequence and its transcription control information). Instead, as noted above, the taggant is applied to the barrel of radioactive waste with a spray bottle.

Second, **the taggant in Dollinger is not used to identify the “source of said predetermined gene”**. Instead, as noted above, the taggant is merely used to identify the source of the barrel of radioactive waste.

Indeed, unlike the claimed invention, Dollinger has nothing to do with “genes” and, in fact, **Dollinger never even mentions the word “gene” throughout the entire specification**. Thus, it is completely unreasonable to attempt to equate the taggant in Dollinger with the “nucleotide sequence” of the claimed invention.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggest by Dollinger. Therefore, the Examiner is respectfully requested to withdraw this rejection.

#### IV. FORMAL MATTERS AND CONCLUSION

Applicant again respectfully requests that the Examiner consider the documents submitted with the Information Disclosure Statement filed on May 17, 2004, and acknowledge her consideration of the documents in her next Official Communication.

In view of the foregoing, Applicant submits that claims 5, 8-12 and 15, 17-27 and 30-34, all the claims presently pending in the application, are patentably distinct over the prior art of

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record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,



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